



Joint Non-Lethal Weapons Directorate

3rd Quarter 2000

Safeguarding Peace... Safeguarding Lives

KOSOVO-USA USE OF NLW

The use of NL Impact Munitions were required during the civil unrest in the Serbian town of Sevice in Kosovo



on 4 April 2000 after military police arrested a local Serb for having ammunition in his home. Approximately 200 Serbs threw large rocks, firewood, limbs and anything else they could get their hands on.

Five soldiers were also subjected to flying debris in the landing zone. The soldiers donned their full riot gear and were equipped with the M-16/M203 to launch 40mm non-lethal munitions. They fired 28 non-lethal multi-foam batons; 7 sponge grenades, and 27 non-lethal multi-rubber balls. The range of engagement varied from 15-75 meters. The impact munitions hit the intended targets in the chest and upper legs. The US KFOR soldiers reported that the multi-rubber ball rounds and the sponge grenades were very effective NL impact munitions; however, the multi-foam baton was not. Capt. Mike Kischner, Task Force Protection Officer, stated, "The bottom line is, despite some issues, the use of NL impact munitions saved lives and kept KFOR soldiers from having to immediately resort to deadly force."

RDOEPP SUBMISSIONS ARE DUE

Yes...we know it's hard to believe that the Directorate is already asking for FY01 funding information but it's true. The Directorate sent out a letter on 13 April 2000 to all activities that are programmed to receive FY01 funds and have asked that their FY01 R&D Obligation & Expenditure Phasing Plan (RDOEPP) – otherwise known as a "spend plan" – be submitted to the Directorate by 30 May 2000. Submissions should be rolled up by service. If you have any questions concerning the RDOEPP, please contract our budget analyst.

JNLWD JOINTLY MANNED ACTIVITY

On 18 November 1999, Dr. John J. Hamre, Deputy Secretary of Defense, designated the JNLWD as a Jointly Manned Activity. Currently, all the respective services are on track to meet the 1 October 2000 military manpower fills at the JNLWD. The Manpower Fills include: Executive Director (Army), Concepts and Requirements Division Deputy Director (Air Force), Requirements Officer (Army) and Experimentation Officer (Navy).

"FROM MY DESK TO YOURS"

Col. G. P. Fenton, Director JNLWD

This last quarter has seen some remarkable accomplishments in the Joint Non-Lethal Weapons Program including the first tactical use of Non-Lethal Weapons by USA troops in Kosovo. The feedback, along with the actual human effects data derived from the National Institute of Justice, will provide the DoD with some of the data we need to begin to determine which NLWs are "effective." We will ultimately pass such data to The Human Effects Center of Excellence (HECOE), once this activity has been formally sanctioned. The HECOE will stand up at the Tri-Service Bio-Effects Lab at Brooks AFB, Texas and will provide the NLW Program Managers and Milestone Decision Authorities with the data they need to make informed & educated decisions.

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Continued

We are also tackling the NLW "Acceptability" piece of the Joint Concept mandate through an NLW Acceptability Advisory Team (NLW-AAT). The NLW-AAT is addressing the tough issues of policy, public awareness, security, legal and environment as they pertain to our evolving technologies and programs. I am truly proud of DOD's teamwork in making these things happen.

Additionally, we are in the middle of an NLW Joint Mission Area Analysis which you can read more about later in this newsletter. The JMAA is determining the functional areas that NLWs play in both the tactical and operational levels of war, e.g., counter-personnel, counter-material, etc. To this end, Service, CinC, and Joint Staff participation have underscored the importance of non-lethal weapons in 21st Century warfighting. I challenge the USAF and USN to become more actively engaged so that the end product better reflects the totality of all service requirements. There are several working groups meeting during the next four months that require USA, USN, USMC, USAF and SOCOM involvement.

The last item I'm working hard on is putting the "Joint" into the Joint Non-Lethal Weapons Directorate (JNLWD). We have now been designated as a "Jointly Manned Activity" and are working with the services to strengthen the existing position descriptions for these officers so that they better reflect a promotable position within each service. These position descriptions will then compete on the Joint Duty Assignment List (JDAL) to receive official joint credit.



NEW USAF JIPT VOTING PRINCIPAL

Brigadier General (select) James M. Shames has assumed duties as Director of Security Forces, Headquarters U.S. Air Force, the Pentagon, Washington, D. C., and the Commander of the U.S. Air Force Security Forces Center, Lackland Air Force Base, Texas. He is the focal point for force protection within the Air Force and is responsible for security planning and programming for 30,000 active duty and Reserve component security forces at locations worldwide. He provides policy and oversight for the protection of Air Force installations from terrorism, criminal acts, sabotage and acts of war, and ensures the training, equipment and readiness of security forces in support of contingency and exercise plans.

FY01 CALL FOR TIPS SUBMISSIONS NEWSLETTER

FY01 Call for TIPS Submission: A Broad Agency Announcement (BAA) was published in the Commerce Business Daily in support of the Joint Non-Lethal Directorate for Basic and Applied Research in non-lethal weapons. This solicitation addresses basic research and development for the application and employment of new non-kinetic/limited effects/non-lethal weapons for personnel incapacitation. The solicitation number is M67854-00-5-3048 and can be found at <http://cbdnet.gpo.gov>. The deadline for initial proposals will be 1600 EST 31 May 00 and final proposals will be required by 1600 EST 31 July 00.

SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM

The Small Business Innovation Research (SBIR) Program is a government-wide program that provides funding to small businesses for technology development. The SBIR program is not directly funded by the JNLWP, but is funded by the Office of Naval Research (ONR).

Currently, the JNLWD is the sponsor of two SBIR topics: 1) Non-Lethal Clearance of Facilities and 2) Personnel and Material Tagging.

The Non-Lethal Clearance of Facilities SBIR was awarded to Scientific Applications & Research Associates (SARA) Incorporated. This project will make use of multi-sensory overload grenade to effectively clear a facility. The senses affected will be vision, hearing, and smell. A successful Phase I demonstration was seen at SARA's facility on 11 Apr 2000. SARA was invited to present a Phase II proposal, which would be a 2-year, \$750K effort. The MARCOR-SYSCOM Non-Lethal PM is sponsoring the transition plan for the technology and their office will be assuming COR responsibilities in Phase II.

The Personnel and Material Tagging SBIR concept is to have the ability to covertly deliver a tagging device that would provide tracking capability from ranges greater than 1 kilometer. Two Phase I proposals were awarded: 1) Signatron Technology Corporation is using an integrated network similar to a paging system to track a tag, and 2) Triton Systems, Inc. is looking at combining a unique delivery system with a RF tag. Both contracts were awarded in April 2000 and are 6-month, \$70K exploratory efforts.



NON-LETHAL WEAPONS JOINT MISSION AREA ANALYSIS (JMAA)

Recent service and CinC experiences during deployments, exercises, and experiments have confirmed the need for Non-lethal, non-kinetic, and limited effects weapons and munitions capabilities to meet operational needs. Each service and geographic CinC has active mission needs statements for non-lethal weapon capabilities. CinCs continue to surface the requirement for Non-lethal/non-kinetic technology in their Integrated Priority Lists (IPLs). A Joint Mission Area Analysis is required to identify and analyze known operational deficiencies, review required operational capabilities, and examine the ongoing development of non-lethal technologies. The JMAA provides an opportunity to coordinate and consolidate common needs and initiate the development of joint requirements in accordance with the requirements in the Joint Vision 2010 Implementation Master Plan (JIMP) and the Requirements Generation System.

On March 6, 2000, the members of the Joint Requirements Oversight Council (JROC) gave their endorsement to the conduct of the Joint Mission Area Analysis (JMAA) for Non-Lethal Weapons.

The Joint Non-Lethal Weapons Directorate (JNLWD) hosted the initial Warfighters Conference of the Non-Lethal Weapons Joint Mission Area Analysis (JMAA) 27-31 March in the Washington, DC area. In attendance were representatives from CinCCent, CinCSouth, CinCUNC/CFC, Joint Forces Command, U.S. Army Europe and Service requirements representatives from the U.S. Army, U.S. Marine Corps, and U.S. Navy. Other represented organizations were the joint staff (J-8), U.S. Coast Guard (Department of Transportation), Office of Naval Research and U.S. Army Tank and Automotive (TACOM)-Army Research and Development Command.

The meeting was extremely successful and accomplished the following objectives: (1) reviewed and updated the existing Non-Lethal Weapons functional areas (previously identified in 1996) by the CinCs, Joint Chiefs of Staff (JCS) and Services; (2) reviewed list of Service/CinC non-lethal/non-kinetic related Mission Needs Statements (MNS) and Operational Requirements Documents (ORDs); (3) reviewed CinC Operation Plan(s) requirements; (4) identified CinC non-lethal operational deficiencies; and (5) developed JMAA/Joint Mission Need Analysis Plan of Action and Milestones (POA&M) to include membership, objectives and deliverables in support of the Joint Vision 2010 Implementation Plan and the Requirements Generation System.

Conference participants revisited non-lethal needs identified, explicitly or implicitly, in official sources such as the Defense Planning Guidance, the Joint Vision 2010 Implementation Master Plan (Desired Operational Capabilities), Joint Universal Task List, and existing Service Mission Needs Statements and Operational Requirements Documents. Using the published Joint Concept for Non-Lethal Weapons as the point of reference, representatives discussed these stated needs and other areas where non-lethal capabilities may apply within the CinC's Area of Operations. Conference attendees reached a consensus

that eight functional capabilities should drive non-lethal weapons requirements. These functional capabilities will be reviewed during the conduct of the JMAA:

1. Control Crowds
2. Incapacitate Individual(s) and Groups
3. Deny an Area to Personnel
4. Clear Facilities, Structures & Areas of Personnel
5. Deny an Area to Vehicles
6. Disable or Neutralize Vehicles, Vessels, Aircraft and Equipment
7. Disable or Neutralize Facilities and Systems
8. Deny the use of Weapons of Mass Destruction.

The initial conference concluded with the formation of supporting working groups in accordance with guidance contained in Requirements Generation System with support and facilitation from the JNLWD. Each group is to have service representation.

1. Operations and Threat
2. Programs and Technology
3. Programs and Resources
4. Policy Review
5. Writing Group

CinC representation and input are key to the success of the JMAA since the results will support service and component Program Objective Memorandum review. CinC representatives were encouraged to actively participate via attendance at meetings and conferences. Prior to returning to the JROC with the findings of the JMAA, we will ensure unified and regional commands are fully cognizant of the JMAA's results. The following was the proposed JMAA meeting schedule for the Plan of Action and Milestones (POA&M):

1. In progress review week of 17-21 July 2000 (Washington DC area—date change from previous report)
2. Final review week of 18-22 September 2000 (location to be determined)
3. Services review and report back to JROC Oct/Nov 2000

The POA&M, along with unclassified interim reports and findings, will be made available via the JNLWP website (<http://www.usmc.mil/nlw>). Contact the Deputy Director for Concepts and Requirements for additional information.



MARINE DAY

On 7 April 2000, the Commanding General, Marine Corps Combat Development Command (MCCDC) hosted the "Congressional Marine Day" at Quantico, Virginia. Approximately 200 members of Congress and congressional staff attended the event. The Joint Non-Lethal Weapons Directorate (JNLWD) displayed various non-lethal items such as: force protection gear, proposed Airborne Tactical Laser mounted on a V-22 model, and various demilitarized weapons and munitions to include the 40mm Non-Lethal Crowd Dispersal Cartridge; 66mm Vehicle Launched Non-lethal Grenades.

NON-LETHAL DEFENSE IV CONFERENCE

The Non-Lethal Defense IV conference was held 20-22 March 2000 at Tysons Corner, Virginia and was co-hosted by the Department of Defense Joint Non-Lethal Weapons Directorate, The National Institute of Justice, Army Research Lab, and Oak Ridge National Lab. The conference successfully brought together representatives from military, law enforcement, industry and other government agencies to discuss non-lethal requirements and concepts. Keynote speakers from DoD included LtGen Raymond Ayres, MG Joseph Cosumano, and COL George Fenton. For copies of the briefs presented at the conference, see <http://www.dtic.mil/ndia/NLD3/index.html>.

SENATE AND HOUSE DISPLAYS

On 29-30 March 2000, representatives from the JNLWD provided a display of various non-lethal capabilities for the Senate and Congressional Technology Displays, respectively, in Washington, D.C. The displays provided both the Senate and the House representatives an opportunity to see the efforts under development for a new



generation of non-lethal weapons and the leveraging of 21st century technology to enable our warfighters to capitalize on a full-spectrum of non-lethal capabilities. The non-lethal display was very effective and could be used as a backdrop for the Congressional Plus Ups.

RIG SYNOPSIS

The Joint Non-Lethal Weapons Requirements Integration Group (RIG) met from 25-27 April 2000 in the ASC conference room, 17961 Dumfries Plaza, Dumfries, VA. The agenda was focused on producing operational context and desired user capabilities for the pre-milestone 0 programs; Non-Lethal Mortar Round (NL-Mortar), Ground Vehicle Stopper (GVS), Objective Individual Combat Weapon (OICW) NL Rounds, and the Vehicle Mounted Active Denial System (VMADS). The RIG members reviewed technical information and briefs from the Technology Division. The RIG members then discussed what operational context would be appropriate for the employment of these programs and which kinds of capabilities the user community desired for these systems. The intent of this effort was to establish how the system would be employed, which core capability functional area(s) it supported, and what kind of effect the system would have on the target. The RIG

members took into account the maturity level of the technology, the likely mission for the proposed system and the potential operational utility of the proposed system. The minutes from the RIG meeting contain the recommendations of the RIG, which will be presented via JNLWD to the Central Action Officers, the Joint Coordination & Integration Group and the Joint Integrated Product Team.

In addition to the operational context and desired user capabilities discussions, the RIG received updates on the Non-Lethal needs and requirements identification effort and a draft Joint Capstone Requirement Document, which identifies non-lethal options for consideration. The RIG was also briefed on the FY 01 CEP # 3 Incapacitate Personnel, the JCATS Capability Set study effort, the Overhead Liquid Dispensing System, the Tasermine project and an Oak Ridge National Lab programs update.

The RIG also revisited the Draft Target Effects and Definitions document development effort. The latest draft document was provided to the RIG members for review and comment. Recommended changes will be incorporated into a final draft, which will be disseminated to all the RIG members for concurrence and submission which will be presented via JNLWD to the Central Action Officers, the Joint Coordination Integration Group and the Joint Integration & Product Team.



US/UK WARGAME SERIES



The US/UK Non-Lethal Weapons (NLW) Policy Seminar was held 19-20 January 2000 at the Marine Corps Research Center, Quantico, VA. This seminar was the first event in a one-year program designed to examine a broad range of issues related to the procurement and employment of non-lethal weapons. The Policy Seminar brought together a diverse group of military and civilian participants. The participants included representatives from the Services, the Joint Staff, selected Combatant Commands, Defense Agencies, Government Laboratories, the Office of the Secretary of Defense, and the United Kingdom Ministry of Defense.

The first US/UK Wargame was held 11-14 April at Wargaming Division, Marine Corps Warfighting Laboratory, Quantico, VA. Wargame #1 examined the employment of non-lethal weapons at the tactical level of war in three different urban scenarios. The three selected urban scenarios were then focused on three different missions a Humanitarian Assistance/Disaster Relief task, a Peacekeeping/Peace Enforcement task and a Major Theater of War task. The players (again drawn from the Services, the Joint Staff, selected Combatant Commands, Defense Agencies, Government Laboratories, the Office of the Secretary of Defense, and the United Kingdom Ministry of Defense) were provided basic information and asked to determine how they

would plan for the use of Non-Lethal Weapons in selected tactical vignettes. Questions included identifying from current and near-term systems which types of NL weapons would be most desirable, what additional types of NL capabilities would the players like to have to perform these tasks, and what would the players do to integrate non-lethal and lethal weapons. These results, combined with the post wargame planning workshop recommendations, will be used to refine issues for the second wargame examining NLW employment at the operational level of warfare. The Operational Level wargame will be held from 13–15 June at the Wargaming Center, Army War College, Carlisle, PA.

USAF LASER ILLUMINATOR PROGRAMS



Air Force Security Forces have supported the development of man-portable, glare-producing, laser illuminators for over five years. These products, either weapon-mounted or hand-held, are to assist Security Forces for

expanding roles in operations other than war, including peacekeeping, humanitarian assistance, and disaster relief. These missions continue to expose our troops to situations that do not always call for the application of deadly force. In the absence of declared hostilities, it may be difficult to decide what the intentions of individuals and/or groups may be. This type of situation will require greater restraint and more options than the use of deadly force to prevent escalation.

Prototype rifle-mounted, glare-producing laser illuminators were deployed during Operation UNITED SHIELD in Somalia during 1995 to help cover the withdrawal of UN forces. Saber 203 was used successfully to “tag” intruders in several engagements resulting in Somali adversaries surrendering or retreating in every instance. While tactically successful, Saber 203 was not used directly to accomplish visual jamming, since it was not approved medically or legally for direct injection of glare.

The user community insisted upon a product outgrowth of Saber 203 that would be eye-safe at any tactical range and in any field conditions. HALT (Hindering Adversaries with Less-than-lethal Technology) was designed to be eye-safe at the aperture, mountable on M4 and M16 weapons, and capable of being modified for hand-held operation. A Technology Demonstration program produced five HALT Demonstration Units that were used in limited field trials to garner user feedback on potential improvements.

In April 2000, ESC/FD, the Air Force Electronic Systems Center’s Force Protection C2 Systems Program Office, received authorization to initiate procurement planning for a HALT Engineering and Manufacturing

Development (EMD) phase. Expected to be awarded in June 2000, the EMD program will result in an affordable, production-ready design. AF Security Forces have estimated an initial production buy of 1,000 systems.

Additionally, AF Security Forces have expressed interest in a hand-held illuminator version in the form of a flashlight. This version would suit a family of law enforcement missions where revealing a lethal weapon is not advised. Funding is being pursued to ruggedize such a product in the FY01–02 time frame.



Rifle-mounted HALT laser illuminators are expected to be a useful tool to be used by Air Force Security Forces in patrolling flight-line perimeters, weapon storage areas, and assisting in air base ground defense missions. Hand-held versions used in law enforcement can be applied to suspect apprehensions, cell extractions, and in base operations where revealing lethal weapons could be counter-productive to expedient conflict resolution.

Human Effects

NON-LETHAL WEAPONS HUMAN EFFECT UPDATE

POLICY

The Human Effects Process Action Team (HEPAT) worked very hard this year to reach consensus on recommendations that will help the JNLWP move forward in the characterization of human effects. Those recommendations are:

1. The DoD should create a Human Effects Review Board (HERB) to review the human effects data with each NLW and make recommendations to the PMs and MDAs on the adequacy of human effects characterizations.

2. The DoD should name an organization as the NLW Human Effects Center of Excellence (HECOE) to aid the PMs with their human effects characterizations. The HEPAT recommended that this HECOE be created with resources from the Air Force Research Laboratory (AFRL) at Brooks AFB, TX because that organization has expertise in bioeffects research.

3. The JNLWP should adopt a risk assessment approach to quantify the effects of NLW. It is our intent to request that the IPT approve a two year pilot program for implementation of the HEPAT recommendations starting in FY01. The pilot program will allow all stakeholders to provide input to the process before it is codified in DoD policy.

At the winter 00 meeting, the IPT approved “pre HECO” activities to be performed by AFRL in FY00. These activities will include consulting with each acquisition program to attempt to identify additional analyses that can be performed to improve our knowledge of the NLW’s effects. AFRL will also draft a human effects characterization manual for use by NLW PMs.

MODELING AND SIMULATION



The JNLWD has been concentrating on modeling the effects of blunt impact weapons in order to predict their injury/lethality and effectiveness.

The prime model for injury/lethality that we are supporting is the Interim Total Body Model (ITBM) that is being developed by Walter Reed Army Institute of Research (WRAIR).

This model provides injury/lethality estimates for various regions of the body. To improve this model, we are doing the following:

1. Funding improvements as proposed by WRAIR and Jaycor Corp. that will validate the existing model with other studies, improve energy transfer estimates for projectile impacts, and extend the model to the entire population. Expected completion, FY02.2. Funding work to validate the Viscous Criterion (VC) as a mechanism for determining injury from blunt impact munitions. This work is being performed by Wayne State University and is partially funded by the National Institute of Justice. The VC is a component of the ITBM.

3. Funding Army Research Laboratory to develop a model of eye injury from a blunt impact projectile. This work will be incorporated into the ITBM.

Mission Research Corporation (MRC) is developing a model of blunt impact to account the interaction of stress waves with tissues and interfaces within the body. This work will be validated by Veridian Corporation under contract with Air Force Research Laboratory at Brooks AFB.

40mm & MCCM INDEPENDENT ASSESSMENT

The Human Effects Advisory Panel (HEAP) continues to perform independent assessments of NLW health effects data.

1. In January 00, the HEAP released their review of the Modular Crowd Control Munition (MCCM) and 40mm Non-Lethal Crowd Dispersal Cartridge (NLCDC). The HEAP recognized the same challenges in blunt impact human effects assessment as in their FY99 report. They also found that the limiting injuries from both devices were likely to be eye injury and recommended a specific study to quantify the risk.

2. In February 00, the HEAP met to review the Portable Vehicle Arresting Barrier (PVAB). The HEAP's report on PVAB should be released during May 00.

3. The HEAP will conduct a review of the 66mm VLNLG system beginning in Oct 00.

4. The HEAP has started the process of assembling a panel to review Directed Energy programs. Look for reviews

NON-LETHAL WEAPONS ACCEPTABILITY ADVISORY TEAM UPDATE

The Non-Lethal Weapons Acceptability Advisory Team (NLW-AAT) has been in existence since September 1999. Their charter is to develop an acceptability strategy for the NLW program. The NLW-AAT is currently formulating their recommendations. Their preliminary thoughts include:

1. The NLW-AAT should be a permanently chartered group that examines NLW systems and surrounding issues and recommends measures that can be taken to address their acceptability.

2. The NLW-AAT should draft an overall acceptability plan for the Joint NLW Program. This plan will address policy, security, and public affairs issues and recommend specific audiences, messages and information opportunities.

3. The NLW-AAT should develop system specific acceptability plans for selected NLW as directed. The plan would recommend audiences, messages, and opportunities based on the acquisition schedule for the system.

Acquisition News

40mm NLCDC CONTRACT AWARD

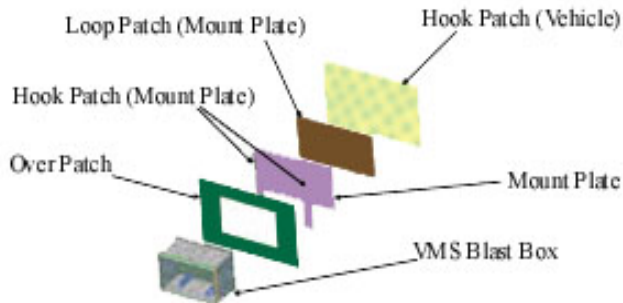
On 10 December 1999, the USA office of the Product Manager for Small Arms at Picatinny Arsenal, New Jersey, awarded the Engineering and Manufacturing Development contract to Defense Technology Corporation of Casper Wyoming. This development effort will field a M203 fired stingball round that will provide crowd control at ranges between 15-30 meters. The estimated cost is \$17 per round. Validation testing was conducted on 11 April. Milestone III is scheduled for 2QFY01.



MODULAR CROWD CONTROL MUNITION (MCCM) CRITICAL DESIGN REVIEW (CDR)

The CDR took place on 17 Feb 00 at Foster Miller in Waltham, Massachusetts. The final design for the Blast Attenuation Box (BAB) and the Fire Control Unit (FCU) were presented to the USA and USMC representatives. On the BAB, concerns about overpressure levels and fireball effects were relayed to the requirements representatives for decision. The user stated that hearing protection is not desired with MCCM-VMS. PM-MCD is working with the

Center for Health Promotion and Preventative Medicine (CHPPM) to address the overpressure level and Foster Miller will address any necessary design changes to accommodate the requirement. On the FCU, it was decided to use an internal 12-volt battery to power the FCU vice vehicle power



and that the two-box configuration (Arming & Firing Unit + Junction Box) was preferred over the single-box FCU configuration. Aiming of the VMS will be accomplished at either 0 or 10 degrees down via alignment holes on top of the VMS. The VMS is being integrated into HMMWV 2.5- and 5-ton trucks. DT/OT is scheduled to begin in this month.

40mm, 60mm, MCCM JOE



The first non-lethal Joint Operational Excursion (JOE) Planning Meeting was held on 13 April 2000 at Aberdeen, Maryland, to discuss the testing scheduled for 17-28 July 2000 at Fort Leonard Wood, Missouri.

The JOE testing will demonstrate and assess the overall effectiveness and suitability of the 40mm NL Crowd Dispersal Cartridge, the 66mm Vehicle Launched NL Grenades, and the Modular Crowd Control Munition-Vehicle Mount System (MCCM-VMS). The tests will also determine the best tactics, techniques, and procedures for employing these systems.



The next JOE meeting will be 13 June 2000 at Fort Leonard Wood where the program managers and test team will survey the test sites.



JOINT INTEGRATION PROGRAM (JIP)

The USMC Program Manager for Ground Weapons held the semiannual Joint Service JIP Meeting on 10 December 1999 at Quantico, Virginia. The purpose of the meeting was to determine the scope and priority of efforts to

be accomplished with FY00

JIP funding. Verbal consensus was attained to

continue the planning

efforts for the ammunition test plan to occur in early FY01.

On 2 Mar 00, the Joint Service NLW Integrated Product Team approved the reprogramming of FY00 funding to fully complete the ammunition test plan, testing and final reports. In addition, they received funding to evaluate the existing and COTS diversionary grenades, 12-gauge flash-bang rounds and horizontal OC dispensers. Also, they will develop a NL Grenade Launching Cup for the Joint Service Shotgun. The services agreed to provide proposed FY01-07 JIP program tasks at the next meeting.



40mm M1006 NON-LETHAL CARTRIDGE MATERIAL RELEASED

On 17 April 2000, MG John Caldwell approved full material release for the 40mm M1006 Non-Lethal Cartridge (Sponge Grenade), making it the first Non-Lethal Cartridge to be material released to the US Army. The MRRB meeting was held on 17 February 2000, all members concurred in full material release with no residual actions required. The cartridge was Load/Assemble/Packed at Pine Bluff Arsenal. The cartridge has been previously fielded through the urgent release process and was recently used in a hostile situation in Kosovo; feedback from the users was very positive.

The M1006 40mm Non-Lethal cartridge consists of a projectile assembly and cartridge case assembly. The projectile assembly has a foam rubber nose and a high density plastic body. It is attached to the cartridge case by an adhesive. The case is a modified version of the plastic case used with the 40mm M781 TP cartridge. An aluminum insert is used to hold a brass case in the base of the cartridge, which in turn holds the propellant.

The benefit to the soldier is that the M1006 will provide friendly forces the capability to stop, confuse, disorient, or momentarily deter a potential threat without using deadly force. It is used for riot control, policing and peacekeeping situations and is fired from the M203 40mm Grenade Launcher.

The M1006 team consisted of members from OPM Small Arms, TACOM-ARDEC, TECOM, OPTEC, DBBL, ATC, WRAIR, USAMPS, ARL, and ATC.

Congratulations to the entire M1006 team on the first material release of a non-lethal cartridge.



Joint Non-Lethal Weapons Directorate

Safeguarding Peace... Safeguarding Lives



Lt. Gen Bedard New IPT Chairman

Lieutenant General Emil R. Bedard assumed the duties as the Deputy Chief of Staff for Plans, Policies, and Operations, Headquarters, U.S. Marine Corps, Washington, D.C. on July 25, 2000.

As Chairman of the IPT, LtGen Bedard's role is to:

- Recommend approval of the JNLWP POM Submissions.
- Provide insight to and review recommendations of the Joint Coordination and Integration Group (JCIG) and JNLWD.
- Review security, environmental, health, safety, and policy issues that arise in the development of NLW systems.
- LtGen Bedard chaired his first IPT meeting, held on 7 September 00.

USN and SOCOM's

New IPT and JCIG Principals

The JNLWD welcomes SOCOM's new Integrated Product Team (IPT) Principal, Major General Geoffrey C. Lambert, US Army. MG Lambert is the Director of the Center for Operations, Plans, and Policy, United States Special Operations Command, MacDill Air Force Base, Florida. MG Lambert served in numerous Special Forces assignments to include Battalion Commander 1st Battalion, 7TH Special Forces Group (Airborne); Commander, 10TH Special Forces Group (Airborne) and Commander, Special Operations Command Europe.

Major General (Select) William A. Whitlow, USMC, Director Expeditionary Warfare Division (OPNAVN85) is the Navy's new IPT Voting Principal. MajGen (Select) Whitlow served in various aviation assignments to include Commanding Officer HMH-362, Commanding Officer of the 15th Expeditionary Unit and as Assistant Wing Commander, 3rd Marine Aircraft Wing. He recently served as Director

of Public Affairs.

Colonel Robert W. Brown, Readiness and Requirements Director for the Center of Operations, Plans, and Policy, United States Special Operations Command, is the new Joint Coordination and Integration Group (JCIG) Voting Principal. COL Brown has served with the 82nd Airborne Division, USAREUR, and Commander of 1st Battalion, 16th Infantry, and 1st Infantry Division. After attending the Naval War College in 1997, COL Brown was assigned as Chief, Ground Branch, Special Actions Division, and Center for Operations, Plans and Policy.

Master Plan



The Joint Non Lethal Weapons Program Master Plan was signed on 25 Aug 00 and will be distributed by mail by 2 October 2000. The Master Plan will also be available on the Joint Non Lethal website at www.usmc.mil/nlw.

Joint Mission Area Analysis JMAA

Joint Mission Area Analysis (JMAA) participants held an In-Progress-Review during 18-20 July 2000 in Washington D.C. . Warfighting CinC's and service representatives revalidated the eight functional areas for Non-Lethal Weapons which are as follows: (1) Control Crowds, (2) Incapacitate Individuals (s) or Groups, (3) Deny an Area to Personnel, (4) Clear Fa-

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cilities, Structures & Areas of Personnel, (5) Deny an Area to Vehicles, Vessels, and Aircraft, (6) Disable/Neutralize Vehicles, Vessels, Aircraft and Equipment (7) Disable/Neutralize Facilities and Systems, and (8) Deny Use of Weapons of Mass Destruction (WMD).

Attendees to the IPR agreed that the structure of the four working groups and a writing group are working well and that the JMAA would require some minor adjustments to the planned schedule to complete its analysis and assessment. The Policy Working Group has completed most of its requirements. The Operations and Threat Working Group has completed the strategy to task analysis and operational mission analysis requirements. The Operations and Threat Working Group will continue with completion of the Threat Analysis and collecting supporting operational analysis information for the report. The review of the CinC's Operational Plans/Contingency Plans & Functional Plans was completed on 15 August 2000. The Programs and Technology Working Group completed its assessments of the "target sets or mission tasks" for the eight functional areas. The Program and Resources Working Group is working on a costing analysis of representative non-lethal weapon systems for the JMAA and expects to complete this effort by the last week of September 2000. All draft input to the Writing Group will be in by 2 October 2000.

The final JMAA Conference will be held in Southern Command's Headquarters, Miami, Florida during the week of 16-20 October 2000. The JMAA results are expected to be briefed to the Joint Requirements Oversight Council (JROC) during 2QFY01.

Services Prepare for Service Program Support Personnel Funding

The JNLWD will provide \$165K to each service and SOCOM in Oct 00 for Service Program Support Personnel. The purpose of this funding is to provide dedicated, service unique, NLW personnel to assist the Service's Joint Coordination and Integration Group (JCIG) Voting Principal and Central Action Officer (CAO) in the execution of their duties. Some of the anticipated functions include ensuring appropriate service representation at JNLWP meetings; ensuring timely, coordinated and complete financial documentation, facilitating service NLW requirements generation efforts; JNLWP

documentation coordination and review; and service action item accomplishment. In short, coordinating and harmonizing their service's NLW efforts.

Services are encouraged to finalize their contractor statements of work or civilian position descriptions and to submit them to the budget analyst at the JNLWD so that funding can be promptly provided.

EXPANDING THE CONTINUUM OF FORCE *Non-Lethal Technology and the Coast Guard*

CAPT Select Brad Jacobs

Of the five armed services of the United States, the Coast Guard is unique, balancing its military missions with federal law enforcement responsibilities. The Coast Guard's military missions and tasks span the spectrum of conflict, from simple peacetime presence all the way to combat missions during Major Theater War. The Coast Guard is also the lead U.S. agency for maritime drug interdiction and must conduct counter drug patrols over a six million square mile area.

The Coast Guard provides at-sea fisheries enforcement of both domestic laws and international agreements. Here also, recent events have shown that the capability to employ an increased level of force is needed by Coast Guard assets.

From the cocaine laden "go-fast" racing across the Caribbean, to the rusted freighter loaded with hundreds of illegal migrants off the coast of California, to the foreign fishing vessels violating the U.S. Exclusive Economic Zone, Coast Guard units are faced with the challenge of compelling compliance from individuals who have no desire to obey. The Coast Guard will continue its efforts to expand the use of non-lethal technologies to address all of these mission areas. Upon delivery of the JIP analysis data on the riot control gear and large capacity OC pepper spray dispensers, the Coast Guard would like to procure dispensers for operational testing for use in migrant interdiction operations. The Coast Guard is also preparing for an operational test of 12 gauge shotgun non-lethal munitions from the JIP to expand the non-lethal tool bag available to our boarding teams, small boat crews and air crews.

The Coast Guard needs non-lethal tools to effectively carry out our many tasks and missions as we enter the 21st century. Working with the other armed services through the JNLWD, the Coast Guard has made great progress in our initial non-lethal proof of concept tests, and intends to expand to year round full operating capability. Our use of force continuum needs to be refined and updated as new tools are tried and tested, and

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as new technologies bear fruit. Standoff distances and non-lethality need to be maximized. As technology advances, the Coast Guard plans to provide the appropriate non-lethal tools to all its platforms...cutters, small boats, helicopters, port security units, and even fixed wing aircraft. We will continue working with the JNLWP to meet unmet requirements as we move toward a complete continuum of Use-of-Force capabilities.

Defense Directive 3000.3

The Department of Defense Directive 3000.3 Policy for Non-Lethal Weapons was published on 9 July 1996 when the Joint Non-Lethal Weapons Program was in its infancy. Since that date, many changes and procedures have been assessed, evaluated and defined in moving Non-Lethal Weapons into a viable and meaningful program.

Dr. Frank Jones, OSD SO/LIC (Policy) has initiated a review, reassessment and update of this important directive. The intent of the new directive will be to update the policy and to better delineate the responsibilities within the Office of the Secretary of Defense (OSD), Services, CinCs, and the Executive Agent. The final draft is tentatively scheduled to be staffed for review and comment during late 1st quarter of fiscal year 2001.

Force Protection Equipment Demonstration III FPED III

FPED III, showcasing the latest in state-of-the-art commercial-off-the-shelf (COTS) force protection and separate security components, is scheduled for 8-10 May 2001 at Quantico Marine Corps Base, Virginia. Over 400 vendors will dem-

onstrate the latest in blast protective barrier systems and windows, ballistics mitigation equipment, personnel protective equipment, explosive ordnance disposal equipment, vehicle barriers, unmanned aerial vehicles, water security and non-lethal weapons among others. FPED III is sponsored by the Joint Staff, the Office of the Under Secretary of Defense for Acquisition and Technology (OUSD, A&T), the Joint Non Lethal Weapons Directorate, The National Institute of Justice, and the Department of Energy. It is not open to the general public and requires pre-registration. On Line registration and information is available at <http://www.monmouth.army.mil/smc/pmpse/fped>. JNLW Program Managers are encouraged to participate in the organizational planning for FPED-III. JNLWD PM's are encouraged to demonstrate and showcase their products at FPED-III. The Joint Integration Program (JIP) will also use this venue to meet to evaluate proposed additions or replacement items for the Service's Non-Lethal Capability Sets.

CEP Update Area Denial to Personnel (AD-P)

The AD-P CEP is an Army Lead effort. Milestone 0 was approved on 29 June 2000. The AD-P CEP effort is intended to field a capability to deny area to personnel such as a bridge, tunnel, overpass, or harbor. A kick-off meeting was held on 12-13 July 2000 at Crystal City. During the meeting the working group established team leaders and group membership. The working group went through the Joint Mission Area Analysis (JMAA) Core Capabilities and Target Sets for Non Lethal Weapons to identify the focus and exclusion areas. Currently the Technical Architecture Team (TAT) is conducting a technology assessment from a technology search database and will have its initial candidate reduction in November 2000. Upon completion of an engineering analysis and an operational utility assessment, a final candidate selection will be completed during Jul 01. An analysis of alternatives (AOA) will be finalized in November 01 with a decision to go before the Integrated Product Team (IPT) in FY02. The CEP Manager can be contacted at jfig@pica.army.mil.

Requirements Integration Group

The Requirements Integration Group (RIG) members met on the 15th and 16th of August, 2000. The agenda focused on the continued search/review of existing Service Mission Need Statements (MNS), Fleet Operational Needs Statements (FONS), Capstone Requirements Documents (CRD), Operational Requirements

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Documents (ORD), etc., that a non lethal capability could fulfill; such as acquisition program updates, modeling & simulation efforts, and a review of program definitions.

The key concern and the primary reason for the emphasis on the search for service NLW related MNS and ORDs is the "gap" that has developed between the formal acquisition legacy programs and the pre-milestone 0 and MS-0 efforts. Without any new service NL requirements, we may have a five-year "gap" between the fielding of the ongoing legacy acquisition programs and the fielding of any systems emerging from the pre MS-0/MS-0 efforts. A possible way to close the "gap" is the identification, assessment and validation of existing systems or programs, which have non-lethal adaptability, joint operational utility and programmatic feasibility. Candidate systems include: Muzzle Launched Ordnance (MLO), M203 launched ordnance, Mk19 launched ordnance, Light Weight Launched Ordnance 155mm Howitzer, High Mobility Artillery Rocket System (HIMARS) Launched Ordnance and Joint Integration Program (JIP) Commercial off the Shelf (COTS) or Government off the Shelf (GOTS) systems. At the FY00 summer JCIG meeting the "gap" issue was highlighted as a concern and the JCIG Principals recommended that the JIPT principals endorse a JNLWD led vigorous scrub of existing service systems and programs. The outcome of this effort should be the identification of and quicker fielding of usable NLW capabilities to the operating forces.

Experimentation

Experimentation Plan

The JNLWP Experimentation Plan (JNLWP-EP) has been developed and presented to the Central Action Officer's for review, comment and concurrence. All concurred with the effort. The JCIG Principals were also provided an Experimentation Plan briefing at their 20 July 00 meeting. The final draft is being prepared for staffing to the service NLW experimentation agencies. The JNLWP EP was developed and prepared in conjunction with the JNLWP Management Plan and is a part of that plan. The plan was also prepared in cooperation with JFCOM J-9 and the alliance of service battle labs, with the intent of optimizing the opportunities for all concerned in the planning and execution of experiments, which involve NLW systems, concepts or desired operational capabilities.

The JNLWD, JFCOM J-9 and the University of New Hampshire are developing a plan for a continuation of the Non-Lethal/Non-Kinetic (NLW/NKT) Limited Objective Experiment (LOE) process. This modeling and simulation-based experimentation effort seeks to build on the insights gained from LOE 001, by expanding the number and types of potential NLW/NKT systems, the types of targets engaged and by conducting the experiment with a JTF HQ conducting a major exercise.

scenarios with a Humanitarian Assistance/Disaster Relief (HA/DR) task, a Peacekeeping/Peace Enforcement task and a Major Theater of War task. The players were drawn from the Services, the Joint Staff, selected Combatant Commands, Defense Agencies, Government Laboratories, the Office of the Secretary of Defense, and the United Kingdom Ministry of Defense. The wargame took place over a three-day period, with a one-day follow-up workshop. The wargame consisted of developing concepts of operation demonstrating how the selected employment of current and potential NLWs would contribute to the successful accomplishment of assigned missions conducted in urban operations.

The US/UK Non-Lethal Weapons (NLW) War Game #3 Strategic Level wargame was held at the Wargame Center, Naval War College, Newport, RI from 12-15 September. Wargame #3 examined the employment of non-lethal weapons at the strategic level using the same scenarios as the previous wargames. For this event players included organizations and individuals with NCA level experience. The wargame focused on the policy implications of the employment of non-lethal weapons from the NCA perspective and explored the potential for the application of non-lethal weapons to contribute to the accomplishment of national objectives across the spectrum of conflict.

The final event of the US/UK Wargame Program is an Executive Seminar review of the Wargame Program's finding and recommendations. The event will be held in London, United Kingdom from 29-30 November 2000. Invited attendees include flag officers and flag equivalents from both the US and the UK, representing selected government organizations and activities, military departments, and operational commands that are responsible for determining how to develop non-lethal weapons, doctrine and concepts of operation that expand the range of options available to commanders. The event will address proposed actions developed from the findings of the Wargame Program in the areas of policy, law, public awareness, education and training, security, operations, technologies, and the environment which require implementation guidance and direction, further study, and recommendations for proposed action agencies or activities.



US/UK
Wargames



The US/UK Non-Lethal Weapons (NLW) War Game #2 Operational Level wargame was held 13-16 June at the Wargaming Center, U.S. Army War College, Carlisle Barracks, PA. Wargame #2 examined the employment of non-lethal weapons at the operational level of war in three different urban



Acquisition News

Portable Vehicle Arresting Barrier PVAB



On 28 June 2000 Col (P) Harrington, (since promoted to BG) the Deputy for Systems Acquisition and Life Cycle Management and the PVAB Milestone Decision Authority, approved a Milestone III for the PVAB to enter into the Production, Fielding/Development and Operational Support Phase. The PVAB is a pre-replaced capture system that will stop a 7500 pound vehicle traveling up to 45 MPH within 200 feet. The system will be used at unit perimeters, dismount areas, check points and roadblocks. The estimated cost per system is \$33,000. Material Release (MR) is scheduled for 2QFY01.



Modular Crowd Control Munition MCCM Vehicle Mounted System VMS

On March 30 2000, Col (P) Harrington (since promoted to BG), the Deputy for Systems Acquisition and Life Cycle Management and the MCCM Milestone Decision Authority, approved MCCM VMS to enter the Engineering, Manufacturing and Development (EMD)



Phase. During this effort, the MCCM VMS will be integrated onto three vehicle types with four sides coverage. Vehicle types include HMMWV's, 2.5 and 5 ton trucks. Milestone III is tentatively scheduled for late 3QFY01.



Joint Acquisition Working Group JAWG

The first JAWG was held at the JNLWD on 7-8 June 2000. The objective of the meeting was to educate and assist NLW program managers and project officers on how to be effective in managing "Joint" NLW Programs that are Post Milestone I. Representatives from the USA, USAF and USMC were in attendance. Topics covered included Joint Acquisition versus Joint Interest; Financial Documentation (RDOEPP, Monthly Reports, UFR's and POM Submissions); Milestone IPR Process, Milestone Documentation Standardization, Health Effects and Security. The draft agenda for the next proposed JAWG in Spring FY01 will cover Director Reviews, Program Cost & Schedule Breeches, Life Cycle Cost Estimates, Thresholds and Objectives, and PEP/P3I's. Results of the first JAWG included requests from the NLW program managers and project officers for additional training on JNLWP financial documentation, setting up a process to provide TIP acquisition assessments; and developing a process to select FY02 Acquisition new initiative candidates for funding. A thorough review of the format and content of the Memorandums of Agreement (MOA) signed between the Acquisition Lead and Supporting Services at Milestone 1 will also be accomplished.

Modeling & Simulation

Over the past year, the JNLWP Modeling & Simulation activity has focused on NLW enhancements to the Joint Conflict and Tactical Simulation (JCATS) code including a partial Verification and Validation (V&V) to ensure model accuracy in the scenarios of interest. The V&V task is being conducted by the Army Simulation Center at Ft. Benning, GA with an expected completion date of 27 October 00. Concurrently, the Directorate has developed NLW data inputs for several of the capability set items and drafted a study plan for utilizing JCATS as a tool to assist in the analysis of the various NLWs and scenarios selected by the services. The goals for the analysis of the NLW Capability Set are to determine military effectiveness relative to some established baseline, determine the optimal weapons mix, identify gaps in capability, evaluate current tactics, techniques and procedures, and take preliminary steps to explore the utility of advanced NLW concepts.

Following delivery of the V&V final report, the Directorate will staff the findings and the capability set study plan to the appropriate service acquisition executives for their review and comment. Execution of the NLW Capability Set Study could then begin starting in 2QFY01.



Technology

NTIC

The Non-Lethal Technology Innovation Center (NTIC) was established at the University of New Hampshire in June 00. NTIC's mission is to identify and develop materials and technologies that can produce the next generation of non-lethal weapons. The center will manage a competitive program to solicit and fund research proposals at the University of New Hampshire (UNH) as part of the grant funding. Sub-grants will be issued to other academic institutions for development of new materials and technologies which offer significant potential for use in non-lethal weapons. This is expected to include significantly different uses of existing materials and technologies, or combinations of existing technologies, as well as totally new ones. NTIC was modeled after a similar, successful prototype effort between UNH and the National Oceanic and Atmosphere Administration (NOAA.) Initial funding for NTIC is \$1.8M provided by Congressional plus up meant to encourage basic R&D in non-lethal technologies. The JNLWD has developed a prioritized set of research topics to guide the NTIC efforts. The areas selected include improvements in rigid foams, anti-traction substances as well as exploration surveys dealing with the psychology of crowd dynamics. Award of the grants is expected to begin in the fall of 2000.

FY01

Technical Investment Programs *TIP Initiatives*

A Broad Agency Announcement (BAA) call for TIP Submissions closed on 31 May 2000. Thirty-five white papers were received and detailed packages were sent to the TIP panel members from each of the services and SOCOM. The panel members prioritized and down-selected the proposals and have solicited 10 submissions for in-depth proposals. During the month of September 2000, the panel will evaluate and select 4-5 proposals for funding of which \$1,000K is budgeted. Recipients will be announced in the first quarter of fiscal year 2000.

Non-Lethal Technology and Academic Research NTAR II

The second Non-Lethal Technology and Academic Research (NTAR) Symposia will be hosted by the University of New Hampshire and co-sponsored by the Joint Non Lethal Weapons Directorate (JNLWD) and the National Institute of Justice. The purpose of the symposium is to engage leading professionals from the academic community in NL technology related research. NTAR II will be held from 15-17 November, 2000 in Portsmouth, New Hampshire at the Sheraton Harborside Portsmouth Hotel and Conference Center. If you wish to attend you can register at www.unh.edu/ntar.

VSS INDEPENDENT ASSESSMENT

By direction of the Joint Non-lethal Weapons Directorate, the Pennsylvania State University Advanced Research Laboratory assembled an independent panel of experts and conducted a technical assessment of the Vessel Stopper System on 28-29 June 2000. In its evaluation the Panel considered the USN approach to developing a capability for stopping vessels with planing and displacement hulls. In general the panel concluded that USN's approach was thorough and well founded. However, it expressed concern and recommended reevaluation of the Exhaust Stack Blocker delivery approach. Additionally, the Panel expressed concern about the apparent lack of USN sponsorship for the Running Gear Entanglement System and recommended continuation of that effort only if that support is assured.



RGES

